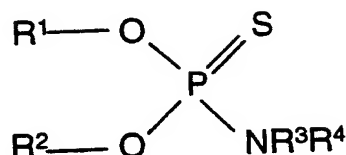


Patent claims:

1. A composition for the flotation of sulfide ores comprising at least one compound of the formula

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where

10 R^1 , R^2 and R^3 independently of one another are alkyl groups having 1 to 18 carbon atoms, alkenyl groups having 2 to 18 carbon atoms, aryl groups having 6 to 10 carbon atoms, or alkylaryl groups having 7 to 10 carbon atoms, and

R^4 is hydrogen or alkyl groups having 1 to 18 carbon atoms, alkenyl groups having 2 to 18 carbon atoms, aryl groups having 6 to 10 carbon atoms, or alkylaryl groups having 7 to 10 carbon atoms.

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2. The flotation composition as claimed in claim 1, wherein R^1 , R^2 and R^3 independently of one another are C₂-C₄-alkyl groups.

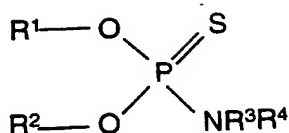
20 3. The use of the flotation composition as claimed in claim 1 and/or 2 in a pH range from 2 to 12.

4. The use of the flotation composition as claimed in claim 1 and/or 2 in amounts of 0.001 to 1.0 kg per tonne of crude ore.

25 5. The use of the flotation composition as claimed in claim 1 and/or 2 in the flotation of nonferrous sulfide ores, the sulfide ore being copper sulfide, nickel sulfide, zinc sulfide, lead sulfide or molybdenum sulfide.

30 6. The use of a flotation composition as claimed in one or more of claims 1 to 5 for the flotation of sulfide ores.

7. A process for preparing compounds of the formula



where

- 5 R^1 , R^2 and R^3 independently of one another are alkyl groups having 1 to 18 carbon atoms, alkenyl groups having 2 to 18 carbon atoms, aryl groups having 6 to 10 carbon atoms, or alkylaryl groups having 7 to 10 carbon atoms, and
- 10 R^4 is hydrogen or alkyl groups having 1 to 18 carbon atoms, alkenyl groups having 2 to 18 carbon atoms, aryl groups having 6 to 10 carbon atoms, or alkylaryl groups having 7 to 10 carbon atoms, which comprises

- a) reacting a dithiophosphate of the formula $(\text{R}^1\text{O})(\text{R}^2\text{O})\text{PS}_2\text{Me}$, where Me is a cation, with an oxidizing agent in acidic solution and then
- 15 b) reacting the resultant product with an amine of the formula HNR^3R^4 .

8. The process as claimed in claim 7, wherein R^1 , R^2 and R^3 independently of one another are C₂-C₄-alkyl groups.
- 20 9. The process as claimed in claim 7, wherein R^1 and R^2 are a butyl group, R^3 is an ethyl group and R^4 is hydrogen.
10. The process as claimed in claim 9, wherein R^1 and R^2 are an isobutyl group.